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TITLE : PRODUCTION OF THIN OXIDE FILM

ABSTRACT : PURPOSE: To produce magnesium oxide selectively to (111) and (100) with good reproducibility by using an inert gas contg. a specific ratio of oxygen as a sputtering gas at the time of producing the magnesium oxide by a sputtering method on a semiconductor substrate or glass substrate.

CONSTITUTION: A gaseous mixture composed of the inert gas and oxygen is used as the sputtering gas at the time of producing the magnesium oxide by the sputtering method on the substrate. The film is formed from this gaseous mixture in the atmosphere contg. $\geq 50\%$ oxygen by which the magnesium oxide oriented in the (111) or (100) direction is produced. The magnesium oxide oriented in the (111) direction is produced at $\geq 700^\circ\text{C}$ substrate temp. and the magnesium oxide oriented in the (100) direction is produced at $\leq 500^\circ\text{C}$ substrate temp. in the above-mentioned method.

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